

Amendments to the Claims

This listing of the claims will replace all prior versions and listings of the claims in the application.

1. (currently amended) A computer readable medium having stored thereon a data structure, comprising:

a payload;

a redundancy; and

a divider between the payload and the redundancy, the divider being movable from a first location, which provides a first ratio of the payload to the redundancy in the data structure, to a second location, which provides a second ratio of the payload to the redundancy in the data structure.

2. (currently amended) The ~~data structure~~ computer readable medium of claim 1, wherein the redundancy contains a first error correction code when the divider is in the first location and a second error correction code when the divider is in the second location.

3. (original) A method, comprising:

associating an initial error correcting code with a redundancy defined within a data storage device; and

replacing the initial error correcting code with an updated error correcting code.

4. (original) The method of claim 3, additionally comprising moving a divider, defined between the redundancy and a payload, to provide space required by the updated error correcting code within the redundancy.

1 5. (original) The method of claim 3, additionally comprising reorganizing an
2 address space shared by a payload and the redundancy to provide space required
3 by the updated error correcting code within the redundancy.

4 6. (original) The method of claim 3, additionally comprising performing a
5 memory test on the data storage device to determine if the initial error correction
6 code is of sufficient strength.

7 7. (original) The method of claim 3, additionally comprising tracking errors
8 made by the data storage device to determine if the initial error correction code is
9 of sufficient strength.

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11 8. (original) The method of claim 3, additionally comprising tracking time
12 and usage of the data storage device to determine if the initial error correction
13 code is of sufficient strength.

14 9. (currently amended) A method, comprising:
15 defining a payload and a redundancy within a storage device, the payload to
16 the payload plus redundancy defining a ratio; [[and]]
17 dynamically altering the ratio to change an amount of the redundancy;
18 tracking time and usage of the data storage device to determine if the ratio
19 results in sufficient redundancy.

20 10. (original) The method of claim 9, additionally comprising:
21 performing a memory test on the data storage device to determine if the
22 ratio results in sufficient redundancy.
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1 11. (original) The method of claim 9, additionally comprising:
2 tracking errors made by the data storage device to determine if the ratio
3 results in sufficient redundancy.

4 12. (canceled)

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6 13. (currently amended) A system, comprising:
7 a technology type determination module to report a technology of a storage
8 device so that an initial error correcting code will be more appropriately selected;

9 an update error correcting code [[ECC]] assignment module to assign an
10 updated error correcting code to replace [[an]] the initial error correcting code in
11 response to a changed error rate; and

12 an error correcting code [[ECC]] library containing at least two error
13 correcting codes [[ECCs]] from which the update error correcting code assignment
14 module may select.

15 14. (original) The system of claim 13, additionally comprising an initial error
16 correcting code assignment module to assign the initial error correcting code in
17 response to an initial error rate.

18 15. (canceled)

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20 16. (original) The system of claim 13, additionally comprising a storage device
21 memory test module to perform a memory test on a storage device and report to
22 the update error correcting code assignment module.

23 17. (original) The system of claim 13, additionally comprising an application
24 determination module to determine an application to which a storage device will
25 be put and to report to the update error correcting code assignment module.

1 18. (original) The system of claim 13, additionally comprising an error
2 tracking, recording and analysis module, to report information on errors made by a
3 storage device to the update error correcting code assignment module.

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5 19. (original) The system of claim 13, additionally comprising an age and use
6 tracking module to report information on an age and use level of a storage device
7 to the update error correcting code assignment module.

8 20. (original) A system, comprising:

9 an ECC library, containing at least two error correcting codes;

10 an initial error correcting code assignment module to assign an initial error
11 correcting code from the ECC library appropriate to an expected initial error rate;

12 a technology type determination module to determine a technology of a
13 storage device and to report the technology to the initial error correcting code
14 assignment module;

15 an application determination module to determine an application to which
16 the storage device will be put and to report to the initial error correcting code
17 assignment module;

18 an update error correcting code assignment module to assign an updated
19 error correcting code from the ECC library appropriate in response to a changed
20 error rate;

21 a storage device memory test module to perform a memory test on the
22 storage device and report to the update error correcting code assignment module
23 so that a decision to assign an updated error correcting code may be made;

24 an error tracking, recording and analysis module to report information on
25 errors made by the storage device to the update error correcting code assignment
module so that a decision to assign an updated error correcting code may be made;

1 an age and use tracking module to report information on an age and use
2 level of the storage device to the update error correcting code assignment module
3 so that a decision to assign an updated error correcting code may be made; and

4 an application tracking module to report changes in an application to which
5 the storage module is being used to the update error correcting code assignment
6 module so that a decision to assign an updated error correcting code may be made.

7 21. (original) A computer-readable medium having computer-executable
8 instructions thereon which, when executed, perform acts comprising:

9 associating an initial error correcting code with a redundancy defined
10 within a data storage device;

11 associating an updated error correcting code with the redundancy in
12 response to a change in an error rate associated with the data storage device; and

13 moving a divider, defined between the redundancy and a payload within the
14 data storage device, to provide space required by redundancy data associated with
15 the updated error correcting code.

16 22. (original) A computer-readable medium having computer-executable
17 instructions thereon which, when executed, perform acts comprising:

18 monitoring an error rate of a storage device; and

19 dynamically altering a ratio of a redundancy to a payload to provide a level
20 of redundancy appropriate to the error rate.

21 23. (new claim) A method of initial error code correction assignment at a
22 manufacturing facility, comprising:

23 locating a divider segregating a payload and a redundancy portion of a data
24 structure in a storage device;

25 allocating the redundancy portion by moving the divider;

assigning an initial error code correction to the redundancy portion.

1 24. (new claim) The method of claim 23 wherein the initial error code
2 correction is assigned based at least in part on an initial determination of storage
3 device technology, a memory test, and a determination of use to which the storage
4 device will be put;

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6 25. (new claim) A method of updating an error code correction assignment for
7 an end-use device, comprising:

8 determining a need to install a substitute error code correction assignment
9 for the end-use device;

10 selecting the substitute error code correction assignment on an as-needed
11 basis;

12 changing the location of a divider to accommodate the substitute error code
13 correction for the end-use device.

14 26. (new claim) The method of claim 25 wherein determining a need to install
15 a substitute error code correction assignment includes tracking errors, monitoring
16 media age and use levels, and performing self-testing to evaluate memory
17 condition for the end-use device.
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1 27. (new claim) A method of determining an initial segregation between a
2 payload and redundancy associated with a data structure of a storage device,
3 comprising:

4 determining a technology type of the storage device;
5 performing a memory test on the storage device and recording a result of
6 the memory test;
7 determining a use to which the storage device will be put;
8 selecting an error code correction based on the determinations and memory
9 test;
10 segregating the data structure to accommodate the error code correction.

11 28. (new claim) The method of claim 27 further comprising mapping out of an
12 address space in the data structure memory locations of inadequate reliability after
13 performing the memory test.

14 29. (new claim) The method of claim 27 further comprising:
15 evaluating information corresponding to an error rate to determine if the
16 error rate has increased;
17 reusing the storage device if the error rate is substantially constant; and
18 updating the error correction code if the error rate has increased beyond a
19 threshold value.